City networks for sustainability in Europe

CITY NETWORKS FOR SUSTAINABILITY IN EUROPE. AN URBAN-LEVEL ANALYSIS

ABSTRACT: Over the last three decades European cities have strengthened their cooperation at EU level to tackle common problems. The joint action of cities has been particularly concerned with the issue of sustainability, signalled by the establishment of specific municipal networks. Socio-ecological urban networks have attracted growing academic attention. However, existing research presents two main limitations: firstly, it overlooks the urban context, and secondly, it is mainly qualitative, and the few quantitative studies do not provide an exhaustive account of the urban drivers underpinning SEUN membership. This article adopts an urban approach to isolate the urban-level economic, political and institutional factors that impact on the involvement of second- and third-tier cities in European SEUNs. For this, logistic and OLS regression models are used to identify the urban-level factors affecting SEUN membership. The findings show that inter-urban networking in Europe is an economic and political strategy adopted mostly by post-industrial cities to strengthen their profile.

Keywords: Socio-ecological urban networks; local governments; regression analysis; European Union.

In the last thirty years European local authorities have pro-actively participated within the European Union through projects and cooperative inter-urban organisations. While until the 1980s cities did not have a prominent role in the

European Community, in the following decades they were incorporated within the EC/EU, as signalled by the establishment of funding and projects for local authorities, the development of consultative practices between local governments and European institutions and the creation of urban organisations and networks (Le Galès, 2002). The latter have multiplied over the years and have become a means for cities to cooperate at EU level. These networks - known in the literature as "Transnational Municipal Networks" (TMNs) or "inter-urban" networks (Kern and Bulkeley, 2009: 313) - group together cities scattered across member states. These organisations have peculiar characteristics: members can withdraw any time; "they appear to be non-hierarchical horizontal and polycentric" and participants are directly involved in decision implementation (Kern and Bulkeley, 2009: 309-310).

City networks have been set up in various policy sectors, such as cohesion policies and transport. However, especially in the European context, such organisations have proliferated in the realm of sustainable development. These networks are deemed a crucial instrument to achieve a "socio-ecological transition", intended as a move towards a system "putting emphasis on an absolute decoupling between GDP growth and material consumption that ensures the sustainability and resilience of socio-ecological systems while improving levels of human well-being" (Labaeye and Sauer, 2013: 1). These networks, here called socio-ecological urban networks (thereafter SEUNs) are a sub-type of TMNs. SEUNs include sustainability as part of their mission and may focus either on specific environmental issues, such as sustainable mobility or energy (e.g. Climate Alliance, EnergyCities, ICLEI and Polis Network), or

cover climate change and sustainability as part of a wider portfolio of activities (such as Eurocities, Metrex and Union of Baltic Cities).

As an object of study, SEUNs have attracted growing academic attention. However, current research on TMNs presents both theoretical and methodological limitations. From a theoretical perspective, most of the dedicated literature conceives SEUNs as a by-product of the multi-level governance within the EU (see for example Bulkeley et al., 2003; Bulkeley and Betsill, 2005; Betsill and Bulkeley, 2006; Kern and Bulkeley, 2009). From this viewpoint, it is claimed that the establishment of TMNs has been favoured by the multi-tier system mode of governance developed within the EU, characterised by the fractioning of competencies among different levels of governments and the involvement in the decision-making of non-public actors. Whilst this stream of research has focused on the supra-national phenomena to explain transnational municipalism for sustainable development, a thorough analysis of the factors intervening at local level is missing.

From an empirical viewpoint, research on cities' involvement in sustainability initiatives is mainly qualitative, where case studies are widely used (Lee, 2013), and has been explored by a small number of quantitative studies (see Feiock et al., 2009; Portney and Berry, 2010; Krause, 2011; Castán Broto and Bulkeley, 2013). With regard to the specific topic of TMNs, only a few studies rely on quantitative methods (see Zahran et al., 2008; Sharp et al., 2011; Lee, 2013; Hakelberg, 2014; Pablo-Romero et al., 2015). By taking into account to the geographical scope, most of the large-scale studies on local governments' engagement in sustainability programmes or organisations focus only on US cities, as Lee (2013) observes (see for instance, Feiock et al., 2009; Krause,

2011; Portney and Berry, 2010; Sharp et al., 2011; Zahran et al., 2008). Some authors have explored global cities worldwide (see Castán Broto and Bulkeley, 2013; Lee, 2013), while some studies examine European cities (Hakelberg, 2014) or cities in a single European country, such as Germany (Busch and Anderberg, 2015) and Spain (Pablo-Romero et al., 2015). Within this stream of research, European second- and third-tier cities have received little attention. The specific political, economic and institutional transformations of European second and third cities over the last decades make them an interesting case deserving closer attention. Harshly hit by the aftermaths of de-industrialisation - namely unemployment, environmental degradation, and economic instability - second and third cities have sought to develop various urban regeneration strategies. Along with the material rebuilding of urban areas and city (re-)branding strategies (Short, 1999), internationalisation is another means for local governments to address urban restructuring processes.

In light of the limitations outlined above, this article seeks to answer the following questions: 1) what factors predict the participation of European second and third cities in SEUNs? And 2) what factors impact on the propensity of these cities to join SEUNs?

The analysis of the urban-level economic, political, institutional factors will reveal whether and to what extent the urban context influences European city-governments' decision to engage in SEUNs. In turn, this will show whether, in an increasingly globalised and europeanised world, local governments still have an autonomous decision-making capacity.

Drawing on a bottom-up approach, which for convenience is termed as *urban*, this article adopts a novel perspective on the phenomenon of transnational municipalism for sustainable development in the EU. This approach focuses on the city rather than the network as the unit of inquiry, thus providing an analysis centred on the urban context – described by economic, institutional and political variables - against which local governments' decision to engage in SEUNs is taken.

The article progresses as follows. In the next section, the factors influencing SEUN membership are outlined and the research hypotheses are set out. The data and methods used in this study are then presented, followed by a concluding section summarising and discussing the findings.

THE URBAN-LEVEL FACTORS

The focus on the city as a unit of enquiry entails an in-depth analysis of the urban context. As theorised by an established and sizeable urban political and sociological scholarship (see for instance Castells, 1977; Weber, 1958; Wirth, 1938), the urban dimension is defined by the entanglement of diverse and composite social, economic, cultural and political spheres; and the co-existence of such spheres – or "systems" to borrow Castells' (1977) terminology – in an urban territory distinguishes the city from other localities. This conceptualisation of the term city suggests that a thorough urban-level analysis should examine these different systems and possibly, their transformations over time. In this respect, it should be specified that throughout this article, the term city is used to indicate city governments. In other words, "city" here indicates the city government, i.e. the local political elite. Although the existence of other

non-public actors (such as pressure groups and businesses) that define urban politics is not neglected, these are not taken into account in this article, which is concerned primarily with municipal political elites[1].

Drawing on urban political scholarship and on some contributions in the field of transnational municipalism - discussed in the following sections - it emerges that it is necessary to include in the analysis four factors to understand the participation of European second and third cities in SEUNs. Firstly, the patterns of urban economic development emerging from the transition to post-industrialism; secondly, the institutional arrangements derived from decentralization processes, which have widened the degree of autonomy of local governments; thirdly, the political leaning of a council, which influences the propensity of a local authority to engage in EU-level initiatives and finally, the political discourses used by political elites to legitimize their political economic choices. These factors are outlined in the next sections.

Urban economy

The economically instrumental linkage between supra-national engagement of cities and the objective of urban regeneration has been pointed out by some authors (see Ewen, 2008; Hall, 1993). In particular, in the European context, some scholars have emphasised the importance of EU funding for local re-development (Bennington and Harvey, 1994; Ewen, 2008).

[1] More precisely, in this article the terms cities, municipalities and local authorities indicate city governments (i.e. city councils), while the terms municipal governments and local governments are used as synonyms of city governments.

This is particularly true for second and third cities, which have been significantly affected by the consequences of de-industrialisation, such as the absorption of the industrial workforce, the redevelopment of former industrial buildings and the requalification of industrial sites. Within this context, cities had to redefine their urban profile. The creation of a new image for former industrial cities has entailed the reconversion of the industrial heritage and the rethinking of the urban identity, which in the industrial city was shaped around the importance of work, and a "collective sense of meaning and significance tied to the city's industrial and manufacturing base" (Short, 1999: 46). In fact, in the attempt to move over the de-industrialization, Western cities were faced with the challenge of reinventing their economy by investing in the new promising economic service sectors and developing an new urban image. However, to recover the urban economy cities needed considerable availability of capital. In this respect, the position of cities in the global economic, financial, political and cultural networks was an important factor to determine the success of their restructuring process. On the one hand, "primate" cities recovered more easily from de-industrialization thanks to their favourable position in the global market, on the other de-industrialization in second cities had different results: while some have been more successful, others encountered more difficulties in restructuring their economies (Savitch and Kantor, 2002). Those cities that successfully recovered from de-industrialisation acquired the rank of post-industrial, indicating "a dominant layer of activity, superimposed upon a diminished base of manufacture, shipping, and skilled trades"; by way of contrast, cities that were not able to regenerate declined, albeit several local

authorities were able to develop some post-industrial economic enterprises such as tourism, cultural and leisure attractions (Savitch and Kantor, 2002: 8).

The efforts of local policy-makers to undertake regeneration have been directed to transform their city in "an innovative, exciting, creative, and safe place to live or to visit, to play and consume in" (Harvey, 1989: 9). In particular, through "urban boosterism" strategies – entailing city marketing and place promotion - former industrial cities have tried to redefine their profile by engaging in initiatives with an outreach even beyond their national boundaries (Hall, 1993: 891). Whilst in the previous decades the archetype of the "modern city" was the industrial city, with the decline of manufacturing, this has been replaced by the post-industrial city, conceived as an international, innovative and - more recently - sustainable city, characterised by an advanced economy with cutting-edge research facilities, internationally renowned universities and high-tech industries.

Internationalisation strategies, such as transnational municipalism, have benefited local authorities, especially where the post-industrial recovery is still *in fieri*, in two main ways. On the one hand, the engagement in international arenas widens cities' reputation, by contributing to build an international profile (Bennington and Harvey, 1994; Betsill and Bulkeley, 2004; Ewen, 2008; Payre and Saunier, 2008). The presence of municipalities at international level supports the development of a new urban image, which is instrumental in attracting inward capital, in form of investments and income from tourists and from a resident professional elite.

On the other hand, for European local governments EU funding has provided additional financial resources to support the completion of their post-industrial transition. For instance, some contributions argue that some British second cities have employed EC funding to subsidise local regeneration (Bennington and Harvey, 1994; Ewen, 2008). In effect, specific programmes and funding schemes have been set up by EU institutions to promote municipal sustainability initiatives, such as the Joint European Support for Sustainable Investment in City Areas (JESSICA)[2], the and URBACT[3]. Transnational urban networking has thus helped European cities to address issues related to urban regenerations by enabling local governments to gain easier access to EU funding to subsidise urban regeneration projects.

The above discussion suggests that cities' participation in SEUNs can be conceived as part of an urban regeneration strategy put in place by those cities undertaking their post-industrial transition. To summarise, it appears that the type of urban economic development matters in the decision to join a SEUN. Therefore, it can be hypothesised that:

> H1: *the more advanced the urban economy the more likely a city is to be member of a higher number of SEUNs.*

Institutional settings: local autonomy

Some contributions on subnational mobilisation point out how the engagement in supra-national organisations allows local governments to widen their

[2] http://ec.europa.eu/regional_policy/en/funding/special-support-instruments/jessica/#1
[3] http://urbact.eu/#

influence and distance themselves from the national government (see for example, Payre and Saunier, 2008; Bulkeley et al., 2003; Bulkeley, 2005). In effect, transnational municipalism has opened up new opportunities for local governments to acquire more autonomy by interconnecting the local and the supra-national levels and by enabling them to undertake decisions without the intervention of the central state.

The concept of autonomy indicates the capacity of local governments to act over their territory almost without interference of upper levels of authorities[4]. The degree of autonomy depends upon the number and scope of competencies and policy instruments of which local governments are entitled as well as the possibility to elect local political representatives. The number and type of competencies of which local governments are endowed vary significantly from one country to another and there may also be variations within the same country. Such competencies may be financial, that is the competence of a local government to manage its budget; administrative, referring to the policy-making capacity of a local authority, and/or political, that is the level of political representation of a local government, indicated by the possibility of electing a spokesperson (e.g. a mayor) for the city. Therefore, it is expected that those local authorities endowed of greater levels of autonomy will be more likely to engage in supra-national activities. More precisely, it can be hypothesised that:

> H2a: *the more financially autonomous a city the higher the propensity to join*;

[4] This is the basic tenet of the subsidiarity principle, whereby the central government should intervene when lower administrative levels cannot ensure an effective action.

H2b: *the higher the administrative status of a city the higher the likelihood to be engaged in a wider number of SEUNs*;

H2c: *the greater the level of local political representation the more likely is the city to participate in SEUNs.*

The political dimension

In addition to the economic and institutional factors outlined above, the municipal political context may impact on local authorities' engagement in SEUNs. In effect, the municipal political environment provides the context where the decision as to whether to join SEUNs is made. Three political drivers can represent city councils' political context: the position of the different political parties with regard to EU policies and politics, which affects their understanding of European urban networks, city governments' cooperative attitude, and the incorporation of urban environmentalism in many parties' agendas. These issues have a national rather than local dimension, insofar as these are mainly shaped by national politics. Nonetheless, the positions of parties on EU politics and environmentalism do affect local politics, since the core ideas and ideologies spread from national party committees to local branches.

Parties' ideology and attitude towards European engagement

The general position of a party towards European integration affects the propensity of local governments to engage at EU level and as a consequence, the scope of the commitment and type of activities in which a city is involved.

Within European studies there is a wealth of studies categorising the position of parties towards European integration. More broadly, parties from centre-left to centre-right are deemed, although at various degrees, as more pro-European, while right-wing as well as left-wing parties are both considered as Eurosceptic (see *inter alia* Hooghe *et al*., 2002; Marks *et al*. 2002).

In addition to the pro-/anti-Europe dichotomy, different nuances of pro-Europeanism can be distinguished. Centre-left parties can be considered as associational pro-European, inasmuch as the support for the EU is rooted in their core values, such as internationalism, and is located in their associational tradition. Also radical left parties display an associational Europeanism: although considered as anti-European, they are not against the EU *per se* – intended as a supra-national cooperative organisation among Nation-States - but are opposed to the current structure and policies of the EU. Hence, it may be argued that they are willing to participate in those European activities that foster a more democratic involvement of individuals. By way of contrast, centre-right and centrist parties can be considered as institutional pro-European. Centre-right parties foster pro-European positions with regard to those economic policies that incentivise economic growth without state intervention, while are less enthusiastic about those practices and policies that favour social policies and integration. For centre-right parties and to some extent centrist parties, pro-Europeanism is embedded in their state-centric and top-down position. Hence, they tend to have a more institutional view of the EU, privileging the participation of nation-states in EU institutions over other decision-making channels.

In light of the discussion laid out above, it is expected that those local councils that have been led by centre-left and left-wing parties will be more likely to be highly engaged in those EU-level activities more in tune with their participatory and internationalist positions. In this sense, parties at the left of the centre may have a positive attitude towards SEUNs (and TMNs more widely), insofar as these organisations may widen the participation of local actors in the EU policy process. Hence, it may be hypothesised that:

> H3: *local governments that have been led by centre-left and left-wing parties will be more likely to be highly engaged in SEUNs.*

Network membership does not only depend on the party majority in the council, but also on the cooperative attitude of a city, that is a high propensity to engage in collective initiatives. The engagement of local governments in several networks may stem from an instrumental conception of network engagement, from path-dependence or from institutional inertia. Generally, it can be said that if the experience in a given network is perceived as beneficial by a local government, this will be more likely to remain in the same network. This case occurs when a network-member considers the benefits of membership, such as funding or the improvement of the city's international profile, greater than its costs. If a city has a rewarding experience in more than one network, then this will be more likely to display a cooperative attitude, expressed by membership in a relatively high number of networks.

However, the decision as to whether to remain in a network may not only depend upon a careful cost-benefit analysis. In effect, as a sizeable body of political literature argues, policy decisions tend to be path-dependent, that is a

policy pattern developed in the past influences future choices (Greener, 2005). In the case under study, an established reputation or a prominent role obtained through a lengthy period of activism within the network may induce a city to remain a member, even if membership provides less valuable benefits. Furthermore, the continuity of the membership may be the outcome of institutional inertia. The lack of a formal questioning of the benefits and costs of network engagement may result in a more or less unaware membership.

Regardless of the nature of the cooperative behaviour, it can be hypothesised that the decision to join a SEUN is influenced by the local government's general propensity to cooperate with European cities. Thus,

> H4: *the higher the propensity to join to a variety of networks, the higher the number of SEUNs of which a local authority is a member*.

Urban environment: the concept of sustainable development

For the case under scrutiny, the incorporation of environmentalism - through the concepts of sustainable development - in local governments' political discourses deserves a closer analysis. In effect, the multiplication of SEUNs raises questions as to why and how much local policy-makers are interested in sustainable development.

At local level, sustainability discourses conceal attempts to reinvigorate post-industrial urban economies. According to Brand (2007: 620), urban environmentalism is politically relevant for local policy-makers for three main reasons. Firstly, due to the substantial public spending cuts after the 1970s that

curtailed local authorities' budgets, the environment was regarded as the means to rebuild social welfare at a low public cost. Secondly, the protection of local ecosystems could be used to recreate "a sense of social unity and collective purpose". Thirdly, by putting in place strategies to improve environmental quality, "[c]ity authorities could show that they still had an important role to play, and one which the market could not fulfil", using "urban environmental management" as a "legitimation strategy".

The political emphasis on the environment appears thus to be politically opportunistic and functional to pursue economic and political objectives. The environmentalist turn of contemporary politics has offered an appealing green variation of the mainstream economic development model for post-industrial cities. The loss of an industrial base has forced local governments to invest in new economic sectors to rebuild their cultural, social and economic identity. In this sense, local governments have incorporated urban sustainability in their political discourses as a "fix" (While et al., 2004) to respond to the challenges of urban regeneration. Urban environmentalism provides a new conceptual framework to replace the "old" politics of industrialism and offers the opportunity to forge a new image for former industrial cities. As discussed previously, the development of a profile as a sustainable or green city, which stands for high levels of quality of life, is instrumental in attracting inward capital. Moreover, in the European context, the commitment of local governments to sustainable development has been incentivised by the allocation of EU funding to projects and initiatives focusing on urban sustainability.

As a result, the inclusion of urban sustainability in mainstream political discourse may not indicate a political plan for moving towards eco-friendly

cities. In this sense, cities' involvement in SEUNs – which exemplifies a certain degree of interest in urban sustainability – may not be associated with high levels of urban environmental quality, inasmuch as both "frontrunners" and "laggards" may be incentivised to engage in SEUNs. While the first may conceive SEUNs as fora where to display their environmental achievements, for the latter networks may constitute a means through which to learn ideas and practices about how to tackle urban socio-ecological problems[5].Following this line of reasoning, it can be hypothesised that:

> H5: *the level of urban environmental performance does not affect SEUN membership.*

METHOD AND DATA

The research hypotheses set out in the previous sections were tested with logistic regression and Ordinary Least Square Regression. The use of both types of regressions provides a comprehensive analysis of the impact exerted by urban-level factors on membership in general and sustainability-related networks. While logistic regression helps to understand what factors play a role in determining network membership, linear regression identifies the factors impacting on the propensity to join a lower or higher number of networks.

The regression models were run using the data for 210 second- and third-tier cities in 14 European Member-States included in the Urban Audit dataset developed by Eurostat. The dataset used in this analysis comprises local

[5] For a discussion on knowledge exchange in TMNs for sustainability see: Andersson (2016); Andonova et al. (2009); Bulkeley and Betsill (2003); Bulkeley et al. (2003); Bulkeley and Newell (2010); Keiner and Kim (2007); Kern and Bulkeley (2009); Ward and Williams (1997).

authorities with a population ranging from 50,000 to around 2 million (see Figure 1). To adapt the dataset for the purpose of this study, only cities from the EU-15 group were included, since a lengthier EU membership results in greater availability of data in European statistical resources[6] [7].

[Figure 1 here]

Dependent variables

The quantitative studies on TMNs mentioned in the introduction include as dependent variables only a few networks in which cities are engaged. This makes it difficult to extend the finding to a wider number of networks. In some cases, engagement in sustainability initiatives is an explanatory variable (see Castán Broto and Bulkeley, 2013; Hakelberg, 2014). European cities are engaged not only in more established and big networks, but also in small networks focused on specific issues. If one takes only big networks into consideration, then the drivers of membership might be completely different from small ones. Hence, the dependent variables included in the regression models group European urban networks regardless of their size. The number of European city networks results from web searches integrated with existing

[6] The 15th EU Member-state would be Luxemburg, but only data on the capital city were included in the original dataset.

[7] In the data collection stage some issues were encountered. Firstly, there was a problem of data availability, in that a comprehensive and updated database including political, economic, environmental and social information at urban level is not yet available. The Urban Audit data date back to 2004, with updates for 2007 only available for some entries. For some environmental indicators figures for 2004 were not available for some cities and therefore were replaced by data for 2001. However, for some entries or indicators no figures were available for both years. The collection of data from other sources was excluded due to a problem of comparability. The use of different data sources is particularly difficult when comparing cities from several countries, where information may be classified differently, or the indicators may be created using different data sources or processes. Therefore, this may result in a situation where such data cannot be compared.

research (see Keiner and Kim, 2007; Labaeye and Sauer, 2013). More precisely, the networks included in the analysis are composed by a significant proportion of non-capital cities located in European countries.

The logistic regression models use two dichotomous variables: European urban network membership, which indicates whether a city is a member of at least one European urban network, and SEUN membership, which refers to the participation in at least one socio-ecological network, i.e. those networks whose mission includes social, environmental and/or environmental sustainability, as explained in the introductory section.

In the linear regression models the dependent variables used are two continuous variables: the total number of European urban network, used in the general model, indicates the number of all the networks of which a city is a member (including networks for sustainability); and the number of SEUNs, used in the sustainable development models, is a scale variable indicating the number of networks focusing on sustainable development of which a city is a member. It should be noted that the category SEUNs includes not only those networks with environmental protection or sustainability as the sole purpose, but also those networks whose portfolio of programmes and projects includes more loosely sustainable urban development (Table 1).

The reason for running regressions with both variables – either dichotomous in the logistic regression or continuous in the OLS – is to control for whether the decision over SEUN membership is affected by the same factors determining membership in all city networks.

[Table 1 here]

Independent variables

Quantitative studies exploring the engagement of cities in sustainability-related initiatives generally include in their analyses four main types of urban-level independent variables: institutional, political, socio-economic and environmental. Institutional variables include the type of city government (Feiock et al., 2009[8]; Krause, 2011[9]; Sharp et al., 2011[10]), "city's level of decentralization" (Lee, 2013) or "metropolitan fragmentation" (Sharp et al., 2011). Variables reflecting the local political context comprise measures of political ideology (Portney and Berry, 2010), electoral preferences of citizens in a specific year (Krause, 2011; Portney and Berry, 2010; Pablo-Romero et al., 2015), citizens' participation either in environmental causes (Zahran et al. 2008), in other political initiatives and groups (Portney and Berry, 2010), or in local policy-making (Lee, 2013). Additionally, Lee (2013) considers the participation of cities in local organisations, but none of the studies includes cities' political leaning overtime. Moreover, some socio-economic variables, such as population size, income and education, are included in these studies. Only a few authors take into account the type of local economy, using variables indicating the presence of manufacturing (Krause, 2011; Sharp et al., 2011; Pablo-Romero et al., 2015), the local financial resources (Krause, 2011; Sharp et al., 2011; Pablo-Romero et al., 2015), or spending for "comprehensive plans" and "economic development" (Feiock et al., 2009). Finally, environmental variables are used to identify cities' potential ecological risks (Feiock et al.,

[8] City manager form of government.
[9] Existence of a mayor-council form of local government.
[10] Mayoral or city manager form of government.

2009; Lee, 2013; Zahran et al., 2008), or local performance using a specific environmental indicator, such as air quality (Feiock et al., 2009; Krause, 2011).

Whereas the categories of variables used in studies in the field were taken into consideration, different variables were employed in this article. This choice was due to the lack or unsuitability of the variables previously indicated to test the research hypotheses, here. Previous quantitative studies fall short of providing a comprehensive theory-based analysis of the urban political and economic drivers underpinning cities' engagement in environmental initiatives. Since the primary aim of this quantitative analysis is to isolate and examine the impact that urban-level factors exert on SEUN membership, state-level variables and measures of civic participation were omitted, since the analysis takes into account the perspective of local political elite. Drawing on these considerations, the following independent variables were employed.

To measure the level of financial autonomy of cities the variable *financial power* was included in the model. This variable was modelled on the "index of city power" developed in the European Commission "State of European Cities Report" (2007) and revised in the second report (EC, 2010). The city power index is built on the following components: 1) city size; 2) governance and political status of cities; 3) "spending power", i.e. the size of budget controlled by the local authorities and 4) "control over income", which represents the extent to which cities can influence income levels through taxation and charges (EC, 2007: 123). As explained in the EC (2007) report, cities were ranked according to each variable and attributed a score, representing their relative position in the ranking. Cities were then grouped in four categories ("most

powerful", "more powerful", "less powerful" and "least powerful"). However, since city size and political status have been taken into account in different variables (city types and administrative status respectively), the power index has been revised to address the purpose of the analysis. Therefore, the variable financial power includes only the factors related to the municipal financial situation[11]. As with the power index, the variable financial power assumes values from 1 to 4[12].

To analyse the urban socio-economic profile the "typology of urban competitiveness" developed in the EC (2007) report was used. This typology – which combines city size, "economic structure", "economic performance" and "drivers of competitiveness" - groups European cities in a range of categories (EC, 2007: 51). For the purpose of this article, the following groups of cities were included in the analysis: knowledge hubs, national service hubs, transformation poles, gateways, modern industrial centres, research centres and visitor centres, de-industrialized cities, regional market centres, regional public service centres and satellite towns.

Using the EC (2007) city-types, the dichotomous variable *modern city* was created to identify those cities with more advanced economies. The value 1 was attributed to those cities classified as knowledge hubs, transformation poles,

[11] The variable financial power includes the following four components used in the "State of the City" report (2010): "annual expenditure per resident"; 2) "proportion of municipal authority income of local taxation"; 3) "local taxes and contributions in relation to total taxes and contributions" and 4) "local government expenditure in relation to total government expenditure".

[12] In the "State of the European Cities Report" (EC, 2007) it is specified that data on spending per inhabitants (in absolute terms), and city authority income derived from taxes were taken from the Urban Audit, while harmonized data on the proportion of total public spending spent by local government and the proportion of total tax revenue received directly by local government from Eurostat.

modern industrial centres and research centres – while 0 indicates cities with less advanced economies[13].

The models include the political leaning of the local governments[14] from 1985 to 2013. This period covers the time span during which several European urban networks were created. Given that different local government systems are in place in Europe, the way to account for the political leaning of a council varies, as shown in Table 2. In those cities where there is a mayor or a political leader retaining executive functions or acting as a figurehead for the city, the party supporting the mayor/leader represents the dominant party in the council. Even in those cities where the mayor is not directly elected but nominated by the municipal council, it is usual that the choice of the mayor rests on the bargaining capacity of the parties in the council. Therefore, the most influential party in the political negotiations will be more likely to see the mayor appointed within its ranks. However, in those countries where the executive is the highest political organ, the political outlook of the council is represented by the party with the highest number of seats in the executive board, insofar as a significant presence in the executive may give the party a greater weight in policy decisions.

[Table 2 here]

[13] It should be noted that, due to missing data for the modern city variable, the number of cases dropped from 210 to 165. Given the high number of missing cases for the modern city variable, all models were run without this variable. For the OLS regressions, the results showed that without modern city, the significance of the other variables does not change considerably. Conversely, the omission of modern city changed the results of the logistic regressions: in the general model none of the variables were significant (with progressive city having a significance value of 0.052), while in the sustainable development model the variables strong mayor and cooperative attitude are highly significant.

[14] The political leaning variable was created using data from several sources, including: websites of National Interior Ministries; websites of National Parliaments; websites of National Statistical Offices; websites of local governments; websites of local libraries; academic articles; books; newspapers; online databases (collecting data on mayors and local elections); websites of political parties.

The political parties across the 14 countries included in the analysis were grouped in five comprehensive categories: 1) progressive parties, including centre-left and left-wing parties; 2) centrist parties, which include liberal-democratic parties both secular and confessional; 3) conservative parties, which encompasses parties from centre-right to far-right; 4) no overall control, which refers to those situations where in the council there is not a clear-cut majority, and 5) independent, when a candidate was not affiliated with any party. The political leaning variable was then recoded as a dichotomous variable – *progressive city* – where the value 1 indicates whether the city has been governed mostly by centre-left/left-wing parties and 0 if otherwise[15].

The level of political autonomy of local governments is represented by the type of mayor. This variable was built on Mouritzen and Svara's (2002) typology of local government, which includes the following four models: 1) the "strong-mayor model", whereby "the elected mayor controls the majority of the city council" and retains all executive functions. This mayoral model characterizes most of the European countries, such as Austria, Germany, Greece, France, Italy, Portugal and Spain[16]; 2) the "committee-leader model": this model describes those countries such as Denmark, Sweden, and the United Kingdom, where local councils are characterised by the presence of a "political leader"

[15] The dominant political leaning was computed using the same party/coalition that was in government for 55% or more of the time span, or for 45% or more and the difference between the 1st and 2nd party in terms of years in government was equal to or greater than14% (i.e. a difference of 4 years). When no party/coalition controlled a given council, then it was classified as "alternate".

[16] Mouritzen and Svara (2002) do not cover all the countries in the EU-15 group. Particularly, drawing on further research on the subject (Magre and Bertrana, 2007; Ejersbo and Svara, 2012; Kuhlmann and Wollmann, 2014), Austria, Germany and Greece have been included in the strong mayor form. It should be noted that in some countries, such as Austria and Germany, mayoral models differ across local authorities. Although the taxonomy used does not account for such differences, it is a useful tool to shed light on the various administrative arrangements existing in Europe.

and s/he may have or not the title of mayor. Although the political leader may be responsible for some executive functions, for others "collegiate bodies" are competent; 3) the "collective form": it can be found in Belgium and the Netherlands, where the "executive committee" is responsible for the executive functions. The mayor is appointed by the central government and presides the executive committee; 4) the "council-manager form": this model is adopted in Finland and Ireland. All the executive functions are held by a professional manager, the "city-manager", appointed by the municipal council. Here the mayor has a representative and ceremonial role.

This variable was then recoded in the dichotomous variable *strong mayor*, where 1 indicates whether a city has a strong-mayor model and 0 if otherwise.

In addition to local governments' financial and political autonomy, a measure of the policy-making competencies was included. The variable *administrative status* reflects the scope of the competencies of which local authorities are entitled by constitutional arrangements. At an operational level, this would require a comparison of the competencies within different policy domains of which local authorities are entitled. However, the lack of available and comparable data for all the cities included in the dataset hindered such a detailed analysis. To overcome this problem, a variable representing the administrative status of a local authority was developed, which considers whether a city has no particular status or is a province, a regional capital or both a province and a regional capital. This indicator represents by approximation the scope of the competencies for which a local government is responsible, since a set of functions established by law is associated to each status, therefore measuring the level of administrative autonomy. Furthermore, this variable seeks to define

the administrative influence of a city over the surrounding area[17]. In order to identify and compare the sub-national administrative divisions, the nomenclature of territorial units for statistics (NUTS) and the local administrative units (LAU) were used.

A further variable included in the analysis is *environmental sustainability*. Since the concept of sustainable development encompasses environmental, economic and social aspects, the inclusion of a measure of urban sustainability incorporating these three components was considered. However, the use of socio-economic indicators (such as GDP per capita, unemployment level, employment by sector, level of education of the population etc.) were likely to create problems of multicollinearity, since these types of indicator are already accounted in the variables modern city (sectoral employment, educational levels of the population, GDP etc.) and financial power (public spending). Therefore, only environmental sustainability was taken into account. The environmental variables – drawn from Urban Audit data for 2004[18] - are: 1) number of days per year that NO_2 concentrations exceed 200mg/m3; 2) number of days per year that PM10 concentrations exceed 50Âµg/m3; 3) accumulated ozone concentrations exceeding 70Âµg/m3[19]; 4) proportion of area in green space; 5) water consumption per inhabitant (cubic metres per annum), and 6) proportion of solid waste processed by recycling. These factors broadly represent the level of urban environmental performance. The choice of the environmental indicators was informed by methodologies adopted in studies developing

[17] In those countries were the status regions and provinces do not exist, equivalent territorial authorities were used.
[18] When data for 2004 were not available, they were replaced by figures for 2001.
[19] The first three indicators represent urban air quality.

environmental indicators, such as the European Green City index (2009) and the European Common indicators (2003). Using factor analysis, a sole variable - environmental sustainability – was created and included in the regression models.

Finally, a measure of the general propensity to participate in networks – the *cooperative attitude* – was created by computing the difference between general and sustainability-related networks. A summary of the variables included in the regression models are shown in Table 3.

[Table 3 here]

Before running the regression models, multicollinearity diagnostics were undertaken, since some of the independent variables were correlated[20]. However, the values of tolerance and the variance inflation factor (VIF) were acceptable, with the first measure lower than .10 and VIF greater than 10. Additionally, also the eigenvalue and the Condition Index were at acceptable levels.

RESULTS

Two sets of analyses were run. A logistic regression analysis was conducted to predict membership in SEUNs. Regression analysis using OLS was run to examine the level of city membership in sustainability-related networks. In each set of analyses two models were estimated: general and sustainability: the first

[20] The multicollinearity diagnostic was performed only for the linear regression.

model estimates membership in European urban networks regardless their mission, while the second model estimates membership in SEUNs.

Logistic regression models

In the general model the dependent variable is a dichotomous variable indicating whether a city is a member of at least one European urban network. The results are shown in Table 4. The modern city variable has a positive and significant effect on the dependent variable. This means that cities with advanced economic activities are more likely to be members of European urban networks. Conversely, higher levels of financial, political and administrative autonomy do not correspond to an increased probability to join a network, nor the political leaning of local authorities, failing to reach statistical significance, despite being positively signed.

In the second logistic regression model the dependent variable is a dichotomous measure of membership in European socio-ecological urban network. The predictors are the same as in the previous model with the addition of environmental sustainability and cooperative attitude, where the latter can be considered as a control variable. The results reported in Table 4 show that financial power, modern city and cooperative attitude have a significant and positive effect on SEUN membership. Here, the significant and positive effect of the financial power variable indicates that the higher the competence of a city to manage its budget the higher the probability to join a network. As with the general model, in the sustainable development model the type of urban economic development impacts on the decision to join a SEUN. Modern cities are in fact 10 times more likely to join sustainable development-related

networks than cities with a less innovative and advanced economic profile. Conversely, the level of environmental sustainability of a city does not affect the participation in SEUNs. This means that local governments' environmental performance does not appear to determine their engagement in European urban networks for sustainable development. Finally, it has to be noted that membership in non sustainability-related networks increases the likelihood that a city becomes a member of a SEUN. In other words, membership in SEUNs is affected by a general propensity to participate in European urban initiatives.

[Table 4 here]

Linear regression models

In the general OLS model, the dependent variable is the total number of European urban networks of which a city is a member. In this model all the variables except for financial power and strong mayor are statistically significant with $p<.01$, and have a positive impact on the dependent variable (see Table 5). The results show that the type of urban economic development plays a significant role in determining the propensity to participate in networks. Modern cities are more likely to participate in a higher number of European city networks than less economically developed cities. Moreover, it appears that those local authorities with a higher administrative status are more likely to join a greater number of networks. Finally, the results show that, when network membership is measured as a continuous variable, the political leaning of the local council seems to affect the decision to join networks, with left-leaning local authorities more likely to participate in more networks.

Three models were then run with the number of SEUNs of which cities are members as the dependent variable. The results are shown in Table 5. The purpose of the three models is to control for the effect that the two variables, environmental sustainability and cooperative attitude, produce on the set of variables used for both the general and sustainability models. In the first model all the predictors used in the general model were included; in the second model, the variable environmental sustainability was included, and cooperative attitude was added in the third model.

In model 1 the results show that all the variables, except for financial power and strong mayor, exert a positive and significant impact on the dependent variable. When the model was run with the variable environment sustainability (model 2), it emerged that the level of urban environmental performance is not statistically significant.

By adding the cooperative attitude variable (model 3), the results provide a similar picture: the higher the administrative status and the more advanced the urban economy the higher the number of SEUNs of which a city is a member. Furthermore, a city with a centre-left political tradition has a higher propensity to join SEUNs. It appears that, whilst the political leaning of the council does not impact on the decision to join a sustainable development-related network, it does affect the propensity to participate in such networks. The variable strong mayor is not significant, showing that higher levels of political autonomy do not influence the scope of cities' engagement in SEUNs. However, cities with a higher administrative status are more likely to join SEUNs and European networks more generally. Indeed, cities with more administrative autonomy have more decision-making freedom and thus have more room to manoeuvre

over their international engagement. Additionally, local authorities with a higher administrative status obtain more benefits from information exchange, as they are entitled of the competencies to implement policy, or at least they have significant political influence in those cases when sub-national administrative levels are entitled of limited competencies. The variables progressive city and administrative status, although statistically significant and positively signed, have a weaker impact than in the previous models. It appears that when a local government is a "serial joiner" - i.e. it has a general tendency to participate in European urban networks - the political outlook and the administrative status play a smaller role in determining the propensity to join a SEUN. More importantly, the three sustainable development models show that the variable modern city is the most significant determinant of local governments' engagement in European SEUNs. Finally, environmental sustainability is again not significant, indicating the apparently limited connection between environmental performance and participation in SEUNs.

[Table 5 here]

DISCUSSION AND CONCLUSIONS

In this article, a set of hypotheses about the drivers of participation in SEUNs has been developed and tested. Drawing on an urban approach, it has been shown that the urban context affects local governments' choice to engage in European urban networks for sustainability. In particular, the findings of the regression analysis support Hypothesis 1, according to which the type of urban economy is associated with participation in SEUNs and European urban networks more widely. This result suggests that cities with an advanced

economy (in terms of technological innovation capacity and highly skilled human capital) are more likely to participate in SEUNs (as well as in other city networks). In turn, this may suggest that those cities that have been able to move from an industrial to a post-industrial economy have used a variety of strategies, including the development of their European profile. Additionally, their high propensity to participate into networks tackling themes related to sustainable development seems to suggest that urban sustainability is a pivotal discourse in urban economic development.

Hypothesis 2 is partially confirmed, in that the results show that the administrative autonomy of local authorities affects positively the propensity to join SEUNs. Therefore, the findings suggest that local authorities with a high administrative status have the policy-making capacity and/or the political influence to develop innovative ideas circulating in the networks and translate them into policies. Conversely, the financial wellbeing and the spending power of a local authority are not related to the participation in either SEUNs or TMNs. Similarly, local governments where the executive power is exercised by a strong mayor are no more likely to get involved in SEUNs.

With regard to Hypothesis 3, the results suggest that the political tradition is not related to the decision to join, but it is associated with the level of participation: cities with governments of different political colours are TMN and SEUN members, but municipal governments with a centre-left political outlook appear to be more likely to join a higher number of TMNs and SEUNs. In other words, whilst the political leaning of a council does not seem to affect the decision to join a network, the local governments with a centre-left political tradition are more likely to engage in a higher number of European inter-urban organisations.

Although deemed as a non-party and non-political concept, sustainable development seems to appeal to more progressive parties. This is not surprising, as sustainable development encapsulates concepts, such as social justice, which are more in tune with the ideological foundations of centre-left parties, and the empirical testing appears to confirm this point.

The findings show that cities with a higher propensity to join SEUNs are also members of other European city networks, therefore confirming Hypothesis 4. It appears that the cooperative attitude of the serial joiners is path-dependent, as it may be the result of positive past European experiences that reinforce their present involvement.

Finally, Hypothesis 5 is confirmed, as there is no repeated evidence of a link between environmental quality and propensity to join SEUNs. This finding indicates that city governments participate in SEUNs regardless of their environmental performance. This may suggest that both "frontrunner" and "laggard" local governments are interested in engaging in these networks: while frontrunners may see networks as a means to showcase their achievements and to maintain their environmental primacy, laggards may regard networks as a means to improve their performance by learning from environmentally virtuous cities.

The analysis here presented adds some new insights on the factors underpinning the European involvement of cities. The findings highlight that participation in European SEUNs is not determined principally by the political will to improve the environmental performance of cities, but it is part of a wider strategy to regenerate cities. This argument casts some doubt on the emphasis placed by

some scholars onto the role played by cities in the struggle against climate change and environmental degradation (see on this point Bansard et. al., 2016).

Some policy implications can be drawn out from the findings. The relation between the modern city status and SEUN engagement appears to be self-reinforcing: "modern" cities tend to be more involved in SEUNs and in turn, such engagement helps them to strengthen their profile. This may suggest that participation in SEUNs can sustain post-industrial cities' efforts to reshape their urban image. In effect, the participation in international initiatives, such as SEUNs, gives local authorities the opportunity to increase their international visibility. Serving as a shop window, the networks may help post-industrial local authorities to show off their image of being a modern city – the one that is creative, cutting-edge and green. By marketing themselves, cities seek to attract inward investments from businesses or tourism that can be used to stimulate the local economy. Consequently, participation in SEUNs can be a strategic choice for those local governments that want to build their international profile; however, this option may be more fruitful for those cities that have the economic and financial capacity to support their participation in the networks.

From an analytical perspective, this article provides a novel contribution to the literature on the involvement of cities in transnational activities. Whilst empirical approaches taking into account the national and international scales have been widely used in the literature, this study has focused on the political, institutional and economic factors that define the context within which the decision of local governments to participate in SEUNs is made. The empirical analysis has hinged on a different conceptualisation of the drivers of local governments' engagement in SEUNs, which brought to the use and creation of

variables not employed by other empirical works on this topic. The results show that urban-level variables exert a significant influence on the decision of cities to engage in European urban networks. Therefore, an urban approach, which accounts for the political, institutional and economic changes occurred in European cities in the last three decades, is better suited to explore the phenomenon of transnational municipalism for sustainable development.

One limitation of the analysis presented in this article was the difficulty to gather up-to-date data for the creation of some of indicators. This limitation relates to general problems of availability and quality of comparable data for cities across different countries that hinder urban political research. Data on economic, political, social and environmental performance may not be available for all the local authorities in a specific geographical region, or, if available, they may be outdated. Additionally, the way data are collected and handled may change from one country to another, making it potentially difficult to draw empirically sound comparisons. Emblematic of these difficulties is Le Galès' (2002) remark in the introduction to his book, according to which: "[w]riting on European cities is an impossible task for at least two reasons: the diversity of cases and the lack of data" (Le Galès 2002: 18). While this statement leaves little hope for advancing empirical urban research, this article has sought to give a small contribution in this direction. It is certainly true that researching local governments in a comparative perspective, even in a relatively similar regional context such as Europe, is challenging. The limited amount of updated and comparable data on some indicators for European cities has constituted a significant concern in the research process. Nonetheless, the issues of data availability and quality have been addressed by assembling in one dataset data collected from different

sources and for several European cities. Through a careful selection of the data to avoid problems of comparability, this article has provided an empirical analysis of transnational municipalism in Europe.

Future research may explore in-depth the reasons for local governments to join SEUNs. Albeit shedding light on the broad urban political, economic and institutional context, the regression analysis has not provided an exhaustive account of the motivations that prompt local policy-makers to decide to participate in SEUNs. In particular, given the significant impact that the variable "modern cities" yields on SEUN membership, future studies could further explore this association, by shedding light on the motivations for post-industrial cities to engage in SEUNs.

REFERENCES

Andersson, I. (2016). Green cities' going greener? Local environmental policy-making and place branding in the 'Greenest City in Europe'. *European Planning Studies*, 1-19.

Andonova, L.B., Betsill, M.M. and Bulkeley, H. (2009). Transnational Climate Governance. *Global Environmental Politics*, 9(2), 52-73.

Bansard, J.S., Pattberg, P.H. and Widerberg, O. (2016). Cities to the rescue? Assessing the performance of transnational municipal networks in global climate governance. *International Environmental Agreements: Politics, Law and Economics,* 1-18.

Benington, J. and Harvey, J. (1994). Spheres or tiers? The significance of transnational local authority networks. In P. Dunleavy and J. Stanyer (eds.), *Contemporary political studies*. Belfast: Political Studies Association.

Betsill, M.M. and Bulkeley, H. (2004). Transnational networks and global environmental governance: The cities for climate protection program. *International Studies Quarterly*, 48(2), 471-493.

Betsill, M.M., H. Bulkeley (2006). Cities and the multilevel governance of global climate change. *Global Governance*, 12(2), 141-59.

Brand, P. (2007). Green Subjection: The Politics of Neoliberal Urban Environmental Management. *International Journal of Urban and Regional Research*, 31(3), 616-632.

Bulkeley, H. and Betsill, M.M. (2003). *Cities and climate change: Urban sustainability and global environmental governance*. New York: Routledge.

Bulkeley, H. and M. Betsill (2005). Rethinking sustainable cities: multilevel governance and the urban politics of climate change. *Environmental politics*, 14(1), 42-63.

Bulkeley, H., Davies, A., Evans, B., Gibbs, D., Kern, K. and Theobald, K. (2003). Environmental Governance and Transnational Municipal Networks in Europe. *Journal of Environmental Policy and Planning,* 5(3), 235-54.

Bulkeley, H. and Newell, P. (2010). *Governing Climate Change*. London and New York: Routledge.

Busch, H., & Anderberg, S. (2015). Green Attraction—Transnational Municipal Climate Networks and Green City Branding. *Journal of Management and Sustainability*, 5(4), 1.

Castán Broto, V. and H. Bulkeley (2013). A survey of urban climate change experiments in 100 cities. *Global Environmental Change*, 23(1), 92-102.

Castells, M. (1977). *The Urban Question*. London: Edward Arnold.

Economist Intelligence Unit (2009). European Green City Index. Assessing the environmental impact of Europe major cities, London, UK.

Ejersbo, N. and I.H. Svara (2012). Bureaucracy and democracy in local government. In K. Mossberger, S.E. Clarke and P. John (Eds.), *The Oxford Handbook of Urban Politics*. Oxford: Oxford University Press.

European Commission (2007). State of European cities report. Adding value to the European Urban Audit, Regional Policy, Brussels, Belgium.

European Commission (2010). Second State of European Cities Report, DG Regional Policy, Brussels, Belgium.

Eurostat (2011). Regions in the European Union 2011. Nomenclature of territorial units for statistics. NUTS 2010/EU-27, European Union, Luxembourg.

Ewen, S. (2008). Transnational municipalism in a Europe of second cities: rebuilding Birmingham with municipal networks. In P.Y. Saunier and S. Ewen (eds.), *Another global city. Historical explorations into the transnational*

municipal moment 1850-2000. Basingstoke and New York: Palgrave Macmillan.

Feiock, R.C., A. Kassekert, F.S. Berry and H. Yi (2009). Institutional incentives and early adoption of sustainable energy innovations, APSA 2009 Meeting Paper, Toronto.

Greener, I. (2005). The potential of path dependence in political studies. *Politics*, 25(1), 62-72.

Goldsmith, M. and Larsen, H. (2004). Local political leadership: Nordic style. *International journal of urban and regional research*, 28(1), 121-133.

Hakelberg, L. (2014). Governance by diffusion: transnational municipal networks and the spread of local climate strategies in Europe. *Global environmental politics*, 14(1), 107-129.

Hall, P. (1993). Forces shaping urban Europe. *Urban Studies*, 30(6), 883-98.

Harvey, D. (1989). From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism. *Geografiska Annaler. Series B, Human Geography*, 71(1), 3-17.

Hooghe, L., Marks, G. and Wilson, C.J. (2002). Does Left/Right Structure Party Positions on European Integration? *Comparative Political Studies*, 35(8), 965-989.

Keiner, M. and A. Kim (2007). Transnational City Networks for Sustainability. *European Planning Studies*, 15(10), 1369-95.

Kern, K. and H. Bulkeley (2009). Cities, Europeanization and multi-level governance: governing climate change through transnational municipal networks. *Journal of Common Market Studies*, 47(2), 309-32.

Krause, R.M. (2011). Policy innovation, intergovernmental relations, and the adoption of climate protection initiatives by U.S. cities. *Journal of Urban Affairs*, 33(1), 45-60.

Kuhlmann, S. and H. Wollmann (2014). *Introduction to comparative public administration: administrative systems and reforms in Europe*. Edward Elgar Publishing.

Labaeye, A. and T. Sauer (2013). City networks and the socio-ecological transition. A European inventory. WWWforEurope WP 27.

Lee, T. (2013). Global Cities and Transnational Climate Change Networks. *Global Environmental Politics*, 13(1), 108-27.

Le Galès, P. (2002). *European Cities: Social Conflicts and Governance: Social Conflicts and Governance*. OUP Oxford.

Magre, J. and X. Bertrana (2007). Exploring the limits of institutional change: The direct election of mayors in Western Europe. *Local Government Studies*, 33(2), 181-94.

Marks, G., Wilson, C.J. and Ray, L. (2002). National Political Parties and European Integration. *American Journal of Political Science*, 46(3), 585-594.

Mouritzen, P.E. and J.H. Svara (2002). *Leadership at the Apex. Politicians and Administrators in Western Local Governments*. Pittsburgh: University of Pittsburgh Press.

Pablo-Romero, M. D. P., Sánchez-Braza, A., and González-Limón, J.M. (2015). Covenant of Mayors: Reasons for Being an Environmentally and Energy Friendly Municipality. *Review of Policy Research*, 32(5), 576-599.

Payre, R. and P.Y. Saunier (2008). A city in the world of cities: Lyon and municipal associations in the 20th century. In P.Y. Saunier and S. Ewen (eds.), *Another Global City. Historical Explorations into the Transnational Municipal Moment 1850-2000*. Basingstoke and New York: Palgrave Macmillan.

Portney, K.E. and J.M. Berry (2010). Participation and the pursuit of sustainability in U.S. cities. *Urban Affairs Review*, 46(1), 119-39.

Sharp, E.B., D.M. Daley, M.S. Lynch (2011). Understanding Local Adoption and Implementation of Climate Change Mitigation Policy. *Urban Affairs Review*, 47(3), 433-57.

Short, J.R. (1999). Urban imagineers: boosterism and the representation of cities. In A.E.G. Jonas and D. Wilson (eds.), *The urban growth machine: Critical perspectives two decades later*. New York: State University of New York Press. Ward, S. and Williams, R. (1997). From Hierarchy to Networks? Sub-central Government and EU Urban Environment Policy. *JCMS: Journal of Common Market Studies*, 35(3), 439-464.

Weber, M. (1958). *The city*. New York: Free Pres.

While, A., Jonas, A. E., and Gibbs, D. (2004). The environment and the entrepreneurial city: searching for the urban 'sustainability fix' in Manchester and Leeds. *International Journal of Urban and Regional Research*, 28(3), 549-569.

Wirth, L. (1938). Urbanism as a Way of Life. *American journal of sociology*, 1-24.

Zahran, S., H. Grover, S.D. Brody, A. Vedlitz (2008). Risk, Stress, and Capacity: Explaining Metropolitan Commitment to Climate Protection. *Urban Affairs Review*, 43(4), 447-474.